**IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE**

Appl. No.	: **09/812,429**
Applicant(s)	: **HERMANN et al.**
Filed	: **20 Mar 2001**
TC/A.U.	: **2664**
Examiner	: **HO, Chuong T.**
Atty. Docket	: **FR-000087**

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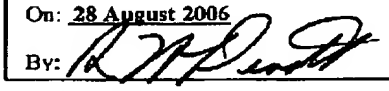
By: 

Title: **METHOD OF INSERTING DATA OF A SECOND TYPE INTO AN INPUT STREAM OF A FIRST TYPE**

Mail Stop: **APPEAL BRIEF - PATENTS**
Commissioner for Patents
Alexandria, VA 22313-1450

APPEAL UNDER 37 CFR 41.37

Sir:

This is an appeal from the decision of the Examiner dated 27 March 2006, finally rejecting claims 1-14 of the subject application.

This paper includes (each beginning on a separate sheet):

1. **Appeal Brief, with appendices; and**
2. **Credit card authorization in the amount of $500.**

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APPEAL BRIEF

I. REAL PARTY IN INTEREST

The above-identified application is assigned, in its entirety, to **Koninklijke Philips Electronics N. V.**

II. RELATED APPEALS AND INTERFERENCES

Appellant is not aware of any co-pending appeal or interference that will directly affect, or be directly affected by, or have any bearing on, the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-14 are pending in the application.

Claims 1-14 stand rejected by the Examiner under 35 U.S.C. 103(a).

These rejected claims are the subject of this appeal.

IV. STATUS OF AMENDMENTS

No amendments were filed subsequent to the final rejection in the Office Action dated 27 March 2006.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The invention addresses a system and method for generating an output transport stream from an input transport stream of a first type and data of a second type. In particular, the invention creates bandwidth in the input transport stream, and inserts the data into this created bandwidth (Applicants' page 1, lines 21-27). The invention is particularly well suited for creating bandwidth within an MPEG-2 transport stream to facilitate the insertion of MPEG-4 data. In one embodiment, the bitrate of the input stream is increased to create the bandwidth to allow for the data insertion; in another embodiment, the input stream is decoded and re-encoded using a lower resolution to create the bandwidth to allow for the data insertion (page 2, lines 1-8).

As claimed in independent claim 1, the invention comprises a server (1 of FIG. 1) intended for generating, from an input transport stream of a first type (TSin) and from data of a second type (M4), an output transport stream of the first type which notably carries the data of the second type (TSout), the server having:

first means (B1 of FIG. 2) for generating an intermediate transport stream (TSm) by creating available bandwidth in the input transport stream (TSin) (page 3, lines 5-9),

second means (B3) for inserting the data of the second type (M4) in the available bandwidth of the intermediate transport stream (TSm), thereby generating the output transport stream (TSout) (page 3, lines 13-15).

As claimed in dependent claim 3, the invention comprises the server of claim 1 wherein:

the streams of the first type are composed of transport packets (page 3, lines 30-31), and

the creation of available bandwidth is made by inserting null packets into the input transport stream (FIG. 3), so that the intermediate transport stream has a higher bit rate than the input transport stream (page 4, lines 5-11).

As claimed in dependent claim 4, the invention comprises the server of claim 1, wherein:

the transport streams of the first type are composed of transport packets (page 3, lines 30-31),

the input transport stream carries a plurality of elementary streams containing encoded data (page 4, lines 16-17), and

the creation of available bandwidth is made by (FIG. 4):

- selecting (B111) one or more elementary stream(s) in the input transport stream,

- demultiplexing (B112) the selected elementary stream(s),

- transcoding (B12) the encoded data contained in the demultiplexed elementary stream(s) in order to reduce the bit rate they occupy

- and remultiplexing (B13) the transcoded data while inserting null transport packets so that the generated intermediate transport stream has a bit rate that is smaller or equal to the bit rate of the input transport stream (page 4, lines 12-31).

As claimed in independent claim 6, the invention comprises a method of generating, from an input transport stream (TSin) of a first and from data (M4) of a second type, an output transport stream (TSout) of the first type which notably carries the data of the second type, the method having:

- a first step of generating an intermediate transport stream by creating available bandwidth in the input transport stream (page 3, lines 5-9),
- a second step of inserting the data of the second type into the available bandwidth of the intermediate transport stream, thereby generating the output transport stream (page 3, lines 13-15).

As claimed in dependent claim 8, the invention comprises the method of claim 6, wherein

the transport streams of the first type are composed of transport packets (page 3, lines 30-31), and

the creation of available bandwidth is made by inserting null packets into the input transport stream (FIG. 3), so that the intermediate transport stream has a higher bit rate than the input transport stream (page 4, lines 5-11).

As claimed in dependent claim 9, the invention comprises the method of claim 6, wherein

the transport streams of the first type are composed of transport packets (page 3, lines 30-31),

the input transport stream carries a plurality of elementary streams containing encoded data (page 4, lines 16-17), and

the creation of available bandwidth is made by (FIG. 4):

- selecting (B111) one or more elementary stream(s) in the input transport stream,

- demultiplexing (B112) the selected elementary stream(s),

- transcoding (B12) the encoded data contained in the demultiplexed elementary stream(s) in order to reduce the bit rate they occupy,

- and remultiplexing (B13) the transcoded data while inserting null transport packets so that the generated intermediate transport stream has a bit rate that is smaller or equal to the bit rate of the input transport stream (page 4, lines 12-31).

As claimed in independent claim 11, the invention comprises an apparatus (FIG. 2) comprising:

an input configured to receive an input transport stream (TSin); and

a generator (B1) configured to generate an intermediate transport stream (TSm) by creating available bandwidth in the input transport stream (page 3, lines 5-9).

As claimed in dependent claim 13, the invention comprises the apparatus of claim 11, wherein

the available bandwidth is created by inserting null packets into the input transport stream, so that the intermediate transport stream has a higher bit rate than the input transport stream (FIG. 3; page 4, lines 5-11).

As claimed in dependent claim 14, the invention comprises the apparatus of claim 11, wherein the available bandwidth is created by (FIG. 4):

demultiplexing (B11) at least one elementary stream in the input transport stream;

transcoding (B12) encoded data contained in the demultiplexed elementary stream in order to reduce a bit rate of the input transport stream; and

remultiplexing (B13) the transcoded data while inserting null transport packets so that the intermediate transport stream has a bit rate that is smaller or equal to the bit rate of the input transport stream (page 4, lines 12-31).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-14 stand rejected under 35 U.S.C. 103(a) over Robinett et al. (USP 6,831,892, hereinafter Robinett) and Ito et al. (USP 6,377,309, hereinafter Ito).

VII. ARGUMENT

Claims 1-14 stand rejected under 35 U.S.C. 103(a) over Robinett and Ito

MPEP 2142 states:

> "To establish a *prima facie* case of obviousness ... the prior art reference (or references when combined) ***must teach or suggest all the claim limitations***... If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness."

Claims 1-14

In each of independent claims 1, 6, and 11, the applicants claim generating an intermediate transport stream by creating available bandwidth in an input transport stream.

The Office action asserts that Robinett teaches generating an intermediate transport stream by creating available bandwidth in an input transport stream. The applicants respectfully disagree with this assertion.

Robinett uses available bandwidth within an input transport stream; Robinett does not create available bandwidth in the input transport stream.

As is known in the art, and acknowledged by Robinett and the applicants, MPEG-2 transport streams are configured so as not to overrun or underrun buffers at the intended receivers. As such, MPEG-2 streams include null packets (packets that contain no video information) to facilitate this flow control without affecting the bitrate of the MPEG-2 stream (Robinett, column 5, lines 28-50). As specifically taught by Robinett:

> "The presence of null transport packets in a to-be-remultiplexed TS [Transport Stream] is often a constraint that simply must be accepted. It is an object of the present invention to optimize the bandwidth of TSs containing null transport packets." (Robinett, column 5, lines 51-54.)

That is, Robinett teaches optimizing the use of the available bandwidth; Robinett does not teach creating available bandwidth.

At column 10, lines 33-40, Robinett teaches the details of this optimization:

> "Each of the null transport packets is inserted into a time slot of the received TS to maintain the predetermined bit rate of the TS when none of the compressed program data bearing transport packets are available for insertion into the received TS at the respective transport packet time slot. The processor selectively replaces one or more of the null transport packets with another to-be-remultiplexed data bearing transport packet."

As is well known in the art, replacing one packet with another to optimize the information content of a transport stream does not change the bandwidth of a transport stream. The Office action asserts that this optimization of the use of available bandwidth constitutes creation of bandwidth, but provides no basis for this assertion (Office action, page 2, fourth paragraph).

Because Robinett fails to teach or suggest generating an intermediate transport stream by creating available bandwidth in an input transport stream, as specifically claimed in each of the applicants' independent claims 1, 6, and 11, the applicants respectfully maintain that a rejection of claims 1-14 under 35 U.S.C. 103(a) that relies on Robinett for this teaching is unfounded, per MPEP 2142.

Claims 3, 8, and 13

In each of claims 3, 8, and 13, the applicants claim creating the available bandwidth by inserting null packets into the input transport stream.

Robinett does not teach creating the available bandwidth by inserting null packets into the input transport stream. To the contrary, as detailed above, Robinett teaches eliminating null packets in the input transport stream by replacing the null packets with data packets (Robinett, column 10, lines 37-40). The Office action acknowledges that Robinett teaches replacing null packets with data packets (Office action, page 8, lines 9-10).

Because Robinett fails to teach or suggest creating the available bandwidth by inserting null packets into the input transport stream, as specifically claimed in each of claims 3, 8, and 13, the applicants respectfully maintain that a rejection of claims 3, 8, and 13 under 35 U.S.C. 103(a) that relies on Robinett for this teaching is unfounded, per MPEP 2142.

Claims 4, 9, and 14

In each of claims 4, 9, and 14, the applicants claim creating the available bandwidth by demultiplexing at least one elementary stream in the input transport stream and transcoding encoded data contained in the demultiplexed elementary stream in order to reduce a bit rate of the input transport stream.

Robinett does not teach creating the available bandwidth by demultiplexing at least one elementary stream in the input transport stream and transcoding encoded data contained in the demultiplexed elementary stream in order to reduce a bit rate of the input transport stream. To the contrary, Robinett specifically teaches the need to preserve the bit rate of the input transport stream (Robinett, column 5, lines 28-54). The Office action references Robinett's page 4, line 62 through page 5 line 12 for this teaching, but at this cited text, Robinett specifically teaches:

> "However, the TS must be further modified to maintain the constant end-to-end delay of each program carried therein. Specifically, the bit rate of each program must not change to prevent TS and video decoder buffer underflow and overflow." (Robinett, column 5, lines 6-9.)

Because Robinett fails to teach or suggest creating the available bandwidth by demultiplexing at least one elementary stream in the input transport stream and transcoding encoded data contained in the demultiplexed elementary stream in order to reduce a bit rate of the input transport stream, as specifically claimed in each of claims 4, 9, and 14, the applicants respectfully maintain that a rejection of claims 4, 9, and 14 under 35 U.S.C. 103(a) that relies on Robinett for this teaching is unfounded, per MPEP 2142.

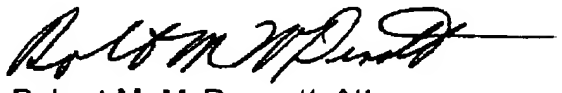
CONCLUSIONS

Because Robinett fails to teach or suggest generating an intermediate transport stream by creating available bandwidth in an input transport stream, the applicants respectfully request that the Examiner's rejection of claims 1-14 under 35 U.S.C. 103(a) be reversed by the Board, and the claims be allowed to pass to issue.

Alternatively, because Robinett fails to teach or suggest creating the available bandwidth by inserting null packets into the input transport stream, the applicants respectfully request that the Examiner's rejection of claims 3, 8, and 13 under 35 U.S.C. 103(a) be reversed by the Board, and the claims be allowed to pass to issue.

Alternatively, because Robinett fails to teach or suggest creating the available bandwidth by demultiplexing at least one elementary stream in the input transport stream and transcoding encoded data contained in the demultiplexed elementary stream in order to reduce a bit rate of the input transport stream, the applicants respectfully request that the Examiner's rejection of claims 4, 9, and 14 under 35 U.S.C. 103(a) be reversed by the Board, and the claims be allowed to pass to issue.

Respectfully submitted,



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CLAIMS APPENDIX

1. A server intended for generating, from an input transport stream of a first type and from data of a second type, an output transport stream of said first type which notably carries said data of said second type, said server having:

first means for generating an intermediate transport stream by creating available bandwidth in said input transport stream,

second means for inserting said data of said second type in the available bandwidth of said intermediate transport stream, thereby generating said output transport stream.

2. A server as claimed in claim 1, wherein

said input transport stream carries control information, and

said server has third means, upstream of said second means, for updating said control information to take said data of said second type into account.

3. A server as claimed in one of claims 1 or 2 wherein

said streams of the first type are composed of transport packets, and

the creation of available bandwidth is made by inserting null packets into the input transport stream, so that said intermediate transport stream has a higher bit rate than said input transport stream.

4. A server as claimed in one of claims 1 or 2 wherein

said transport streams of the first type are composed of transport packets,

said input transport stream carries a plurality of elementary streams containing encoded data, and

the creation of available bandwidth is made by:

- selecting one or more elementary stream(s) in said input transport stream,
- demultiplexing the selected elementary stream(s),
- transcoding the encoded data contained in the demultiplexed elementary stream(s) in order to reduce the bit rate they occupy
- and remultiplexing said transcoded data while inserting null transport packets so that the generated intermediate transport stream has a bit rate that is smaller or equal to the bit rate of said input transport stream.

5. A broadcasting system comprising

at least a server as claimed in one of claims 1 or 2 and

a client terminal intended

to receive the output transport stream delivered by said server and

to retrieve the data carried in this transport stream in view of a use in a client application.

6. A method of generating, from an input transport stream of a first and from data of a second type, an output transport stream of said first type which notably carries said data of said second type, said method having:

- a first step of generating an intermediate transport stream by creating available bandwidth in said input transport stream,
- a second step of inserting said data of said second type into the available bandwidth of said intermediate transport stream, thereby generating said output transport stream.

7. A method as claimed in claim 6 wherein

said input transport stream carries control information and

said method has a third step, upstream of said second step, of updating said control information to take said data of said second type into account.

8. A method as claimed in one of claims 6 or 7 wherein

said transport streams of the first type are composed of transport packets, and

the creation of available bandwidth is made by inserting null packets into the input transport stream, so that said intermediate transport stream has a higher bit rate than said input transport stream.

9. A method as claimed in one of claims 6 or 7 wherein

said transport streams of the first type are composed of transport packets,

said input transport stream carries a plurality of elementary streams containing encoded data, and

the creation of available bandwidth is made by:

- selecting one or more elementary stream(s) in said input transport stream,
- demultiplexing the selected elementary stream(s),
- transcoding the encoded data contained in the demultiplexed elementary stream(s) in order to reduce the bit rate they occupy,
- and remultiplexing said transcoded data while inserting null transport packets so that the generated intermediate transport stream has a bit rate that is smaller or equal to the bit rate of said input transport stream.

10. A computer program having means for implementing a method as claimed in one of claims 6 or 7.

11. An apparatus comprising:

an input configured to receive an input transport stream; and

a generator configured to generate an intermediate transport stream by creating available bandwidth in said input transport stream.

12. The apparatus of claim 11, wherein

said input transport stream is of a first type, and

said input is further configured to receive data of a second type;

said apparatus further comprising:

an output configured to output an output stream of said first type which carries said data of said second type; and

an inserter configured to insert said data of said second type in the available bandwidth of said intermediate transport stream, thereby generating said output transport stream.

13. The apparatus of claim 11, wherein

said available bandwidth is created by inserting null packets into said input transport stream, so that said intermediate transport stream has a higher bit rate than said input transport stream.

14. The apparatus of claim 11, wherein said available bandwidth is created by:

demultiplexing at least one elementary stream in said input transport stream;

transcoding encoded data contained in the demultiplexed elementary stream in order to reduce a bit rate of said input transport stream; and

remultiplexing said transcoded data while inserting null transport packets so that said intermediate transport stream has a bit rate that is smaller or equal to said bit rate of said input transport stream.

EVIDENCE APPENDIX

No evidence has been submitted that is relied upon by the appellant in this appeal.

RELATED PROCEEDINGS APPENDIX

Appellant is not aware of any co-pending appeal or interference which will directly affect or be directly affected by or have any bearing on the Board's decision in the pending appeal.